

## **SYSTEMS AND METHODS FOR ROUTING PACKETS IN MULTIPROCESSOR COMPUTER SYSTEMS**

### **Abstract**

A system and method of building a routing table for use in a multiprocessor computer system having a plurality of processing nodes and physical communication links interconnecting the processing nodes in a predefined topology. The system determines all single hops for each processing node, queries each adjacent node for its single hop routes, determines if all nodes can be reached and if all nodes cannot be reached, sets  $x=2$ . The system then queries each adjacent node for its “x” hop routes, eliminates all routes to a particular node that are longer than existing routes from the node where the routing table will reside to that particular node, eliminates all routes that introduce a cyclic dependency and chooses a best route for the node. The process is repeated as needed until all nodes can reach all other nodes.